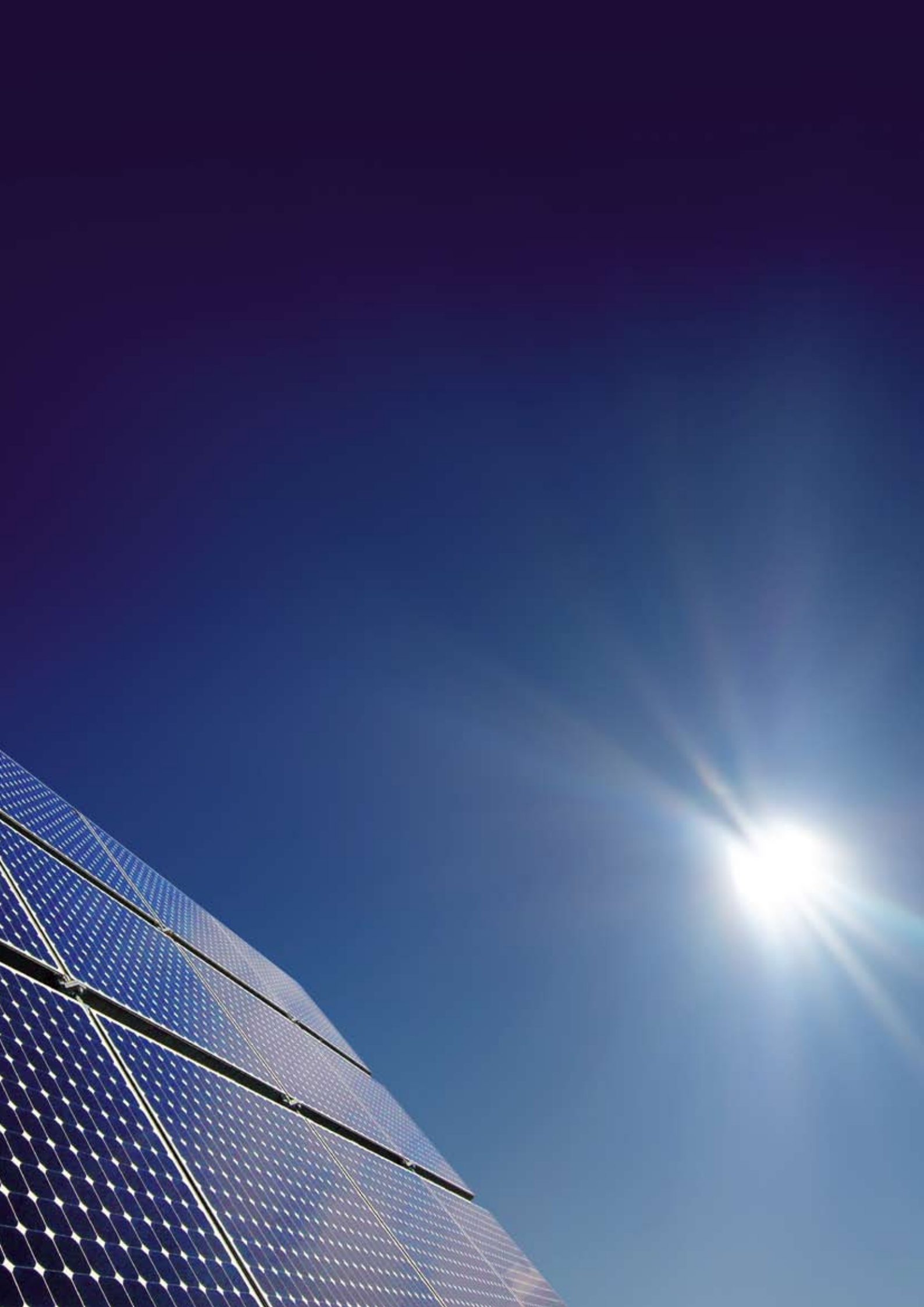




ENGINEERING  
EXCELLENCE



**Photovoltaic**



# The sun is the main source of energy. We bring it to earth.

Using the renewable resources provided by the earth and the sun provides an opportunity to usher in a new energy age. Investing in photovoltaics means investing in one of the most important technologies of the 21st century. We are convinced that this is the correct decision in economic terms and an important step towards protecting our planet for future generations. ILF Consulting Engineers is your partner for the successful development, planning, design and implementation of photovoltaic projects.



## ■ ILF - your partner in energy projects

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For more than 40 years ILF has been providing consulting services for the development of complex projects in the energy sector, constantly expanding its business areas: oil & gas, energy & climate protection, water & environment, transport & structures. Whether for thermal or renewable energy power plants, ILF offers overall design and management services as a reliable partner with profound expertise and high, innovative performance standards. In addition to environmental sustainability and cost effectiveness throughout the lifecycle of your projects, ILF is also committed to creating better living conditions for the population at large, a corporate goal implemented across all business areas.

## ■ ILF - your partner with wide-ranging experience

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When embarking upon projects, it is important to have a qualified partner who can analyse the particular conditions prior to the final investment decision. What is the applicable energy legislation, what are the grid connection conditions, how can I contact the power supply companies? An authoritative answer to each of these questions provides the basis for making your project a success.

Having successfully completed over 3,500 projects around the world, ILF has a proven track record. We would like to share our experience and know-how with you. We are an interdisciplinary partner for you, completely independent of the interests of manufacturers and suppliers.

## ■ ILF - your partner for success

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Our priority in realising our projects is always total client satisfaction. Your success is our aim!

Private enterprises, public bodies, international financial institutions - we have a wide-ranging international clientele and are proud of the fact that we have been partnering our clients in their projects for many years.

With over 30 office locations and project experience on every continent, ILF is your ideal international partner.







# We support you, from development to operation.

## ■ Feasibility

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Show us your project idea and we will tell you what is feasible. ILF first conducts a thorough examination of the technical, operational and economic conditions. We also analyse the environmental and social effects and assess the project's likelihood of approval.

Do you have a project development site? We will tell you whether it is suitable for your project. Following an initial site inspection, the suitability of the area is evaluated and a geological survey carried out if desired. Using specialised software, ILF's engineers run profitability simulations and can if necessary obtain a yield analysis from a third party institute. We also examine regional plans, legislation and regulatory risks as well as the critical issue of grid connection, always giving priority to your needs and wishes.

## ■ Planning and design

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Once local conditions have been examined, we develop appropriate plant concepts using the state-of-the-art technology. The main aim is optimum profitability for our clients. We prepare the tender documents with detailed descriptions of the individual plant components and identify the most suitable EPC contractor. We can assist you in both the drafting and negotiating of contracts while appreciating the best conditions for the complete lifecycle of your plant, particularly with regard to operating and maintenance contracts.

We offer one-stop services: optimised, fully detailed project concepts, including efficient land usage and ideal component selection as well as safety and monitoring technologies. Which mounting structure, inverters and modules are right for your project? Technical know-how and the vision gained from years of experience allow us to provide the answers to these questions.

## ■ Implementation

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ILF's engineers supervise the entire construction and assembly works to ensure that the project is implemented according to plan. We work closely with our clients, conferring with them at all project stages. In advance, we make detailed plans for commissioning and start-up, including coordination with the local energy supplier. In order to verify the contractually agreed performance values, we perform structured, consistent inspections during the takeover process.

## ■ Client support

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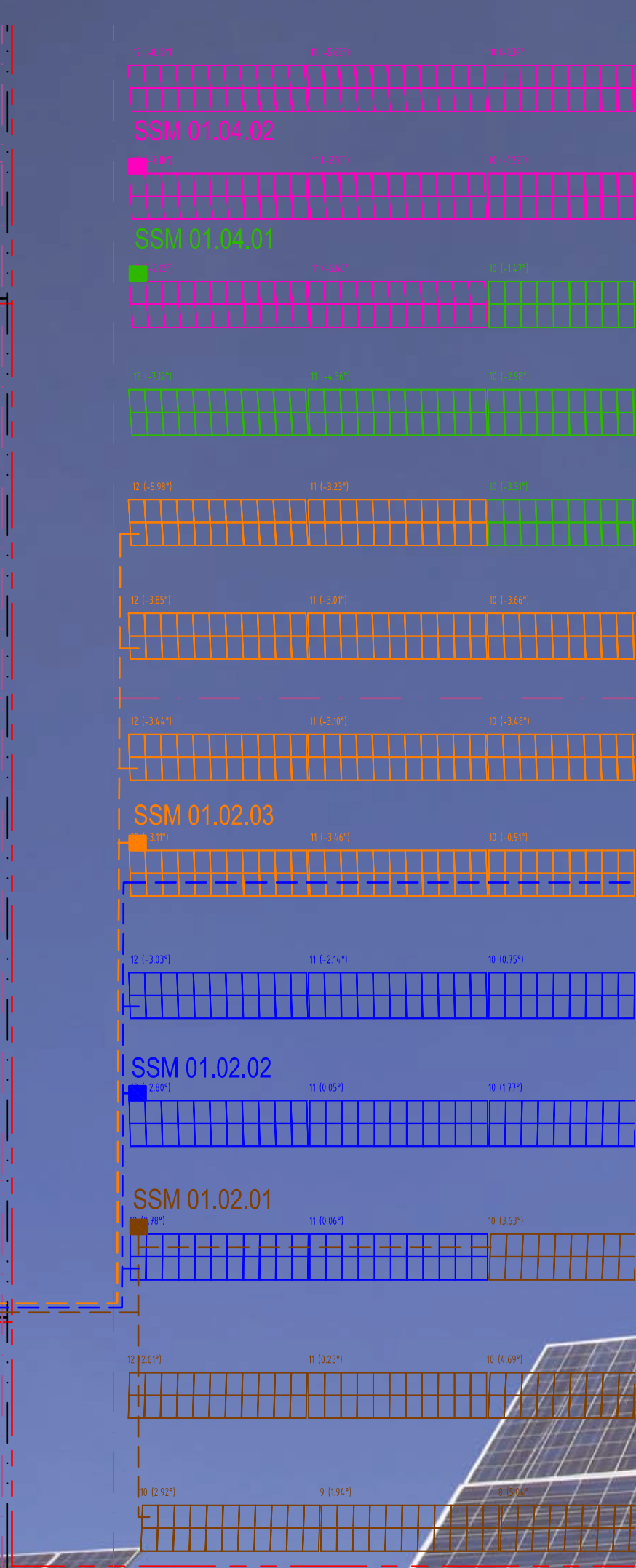
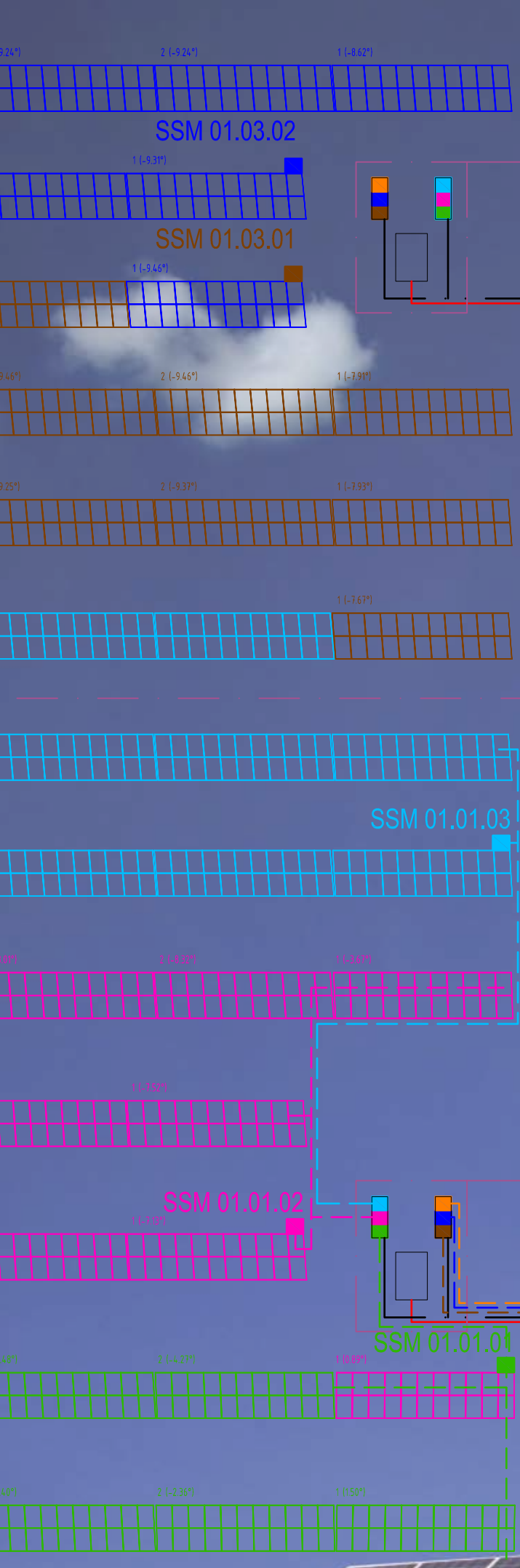
We support you throughout the entire project and are prepared to answer all of your questions at any time. We pay attention to ensuring the highest standards of quality, efficiency and reliability. Our professionalism allows us to react to project changes in a fast and flexible manner. We use the latest software, such as PVSyst, PV\*Sol and Helios 3D and can exclusively provide you with animated 3D-simulations for presentations to give communities, authorities and investors a first impression of the future photovoltaic power plant.



## ■ An overview of our services

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- Pre-feasibility assessment
- Feasibility studies
- Project appraisals
- Lender's engineering
- Due diligences
- Project management
- Permit application design & land acquisition
- Planning & design
- EPC contracting
- Construction supervision
- Plant commissioning
- Acceptance tests
- Performance ratio verification
- 3D-Simulations



# We bring your vision to life. Worldwide.

## ■ Photovoltaic power plant Mihalich, Bulgaria

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One of the largest photovoltaic projects in the world is being developed in south-eastern Bulgaria, near the Turkish border.

Our services:

- Preliminary study, conceptual design, tender design, permit application design, profitability and financial analysis as well as project management for:
  - 110 kV grid connection with 20 kV/110 kV transformer substation
  - 20 kV distribution network
  - 17 PV power plants with up to 5 MW each
  - Total capacity of up to **76 MW**



## ■ Photovoltaic power plants, El Salvador

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El Salvador is the site of the first large-scale photovoltaic project to be developed in Latin America. The two project sites are in close proximity to existing hydroelectric power plants and will share the existing infrastructure.

Our services:

- Feasibility study, analysis of social and environmental sustainability, profitability and financial analysis for:
  - 46 kV grid connection
  - 13.2 kV distribution network
  - 2 PV power plants with a total capacity of up to **18 MW**

## ■ Photovoltaic power plant Sicily, Italy

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This photovoltaic project has a special feature: all PV modules are completely integrated into greenhouses.

Our services:

- Preliminary study, conceptual design, tender design, permit application design as well as project management for:
  - 20 kV grid connection
  - 20 kV distribution network
  - 3 PV power plants with a total capacity of **8.5 MW**

## ■ Photovoltaic power plant Sredets, Bulgaria

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One of Bulgaria's largest photovoltaic projects is being planned close to the Black Sea.

Our services:

- Conceptual design, tender design as well as permit application design for:
  - 20 kV grid connection
  - 20 kV distribution network
  - 8 PV power plants with up to 2 MW each
  - Total capacity of up to **12 MW**



ILF Consulting Engineers (ILF) consists of several international and independent engineering and consulting companies. ILF offers international top-quality design and consulting services in the Oil & Gas, Energy & Climate Protection, Water & Environment, Transport & Structures sectors. Our clients rely on ILF's comprehensive capabilities and professional know-how that the company has acquired in more than 40 years. **Contact: [photovoltaic@ilf.com](mailto:photovoltaic@ilf.com)**